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tution was demonstrated during the World War by the existence of the American University experimental station.

THE Bureau of Foreign and Domestic Commerce, in cooperation with the Bureau of Mines, has completed arrangements to produce in this country motion picture films showing methods of production and employment of American machinery and similar products. The actual cost of the photography, as well as the expenses incurred in the making of additional prints of the films, is borne by the cooperating company. After the picture has been completed and approved, the work of distributing the films, both in this country and abroad, is taken care of by the Bureau of Foreign and Domestic Commerce without any further expense to the company.

FURTHER information in regard to radium in the Congo is quoted from the bulletin of the Belgian Chemical Society to the effect that the sample of minerals assayed by Professor Schoep of the University of Ghent yield 424 kg. of uranium and 139 mg. of radium to the ton. The minerals came from the Upper Katanga, in the concession of the Union Minière which has entrusted the industrial treatment of the uranium to the Belgian Société Générale Métallurgique de Hoboken, which has put up a factory for the purpose in the Antwerp district. Other deposits of the same minerals have been found at other points specified, and Professor Schoep has found two new kinds of minerals among them, extremely radioactive. He has named one "curite" and the other "kasolite," and announces that the crystals are soluble in nitric acid, and the radium salt can then be extracted from the fluid without passing through the usual calcination process.

IMPROVEMENTS of the wireless plant at the University of Iowa have increased the range of station 9YA to 1,000 miles under average conditions and 2,000 miles when conditions are favorable. The university is now broadcasting regular weekly programs under the direction of the extension division. Besides the regular programs all noteworthy happenings on the university schedule are broadcasted as they take place. Thus far nothing of a strictly edu-

cational nature has been attempted, the programs being arranged with entertainment rather than instruction in view.

DR. HENRY NORRIS RUSSELL, professor of astronomy, Princeton University; Dr. Robert A. Millikan, of Chicago, head of the Norman Bridge Laboratory, California Institute of Technology; Mr. Charles W. Brown, professor of geology, Brown University, and Dr. Gilbert N. Lewis, professor of physics, University of California, have completed a series of lectures at Pomona College, covering recent advances in physical science. Their subjects were: "The evolution of the stars," "Modern atomic theories," "The energy, composition and structure of the earth," and "The chemistry of the stars."

THE annual meeting of the Nebraska Academy of Science will be held at Nebraska Wesleyan University on April 21 and 22. On the evening of April 21 Dr. G. W. Stewart, of the University of Iowa will deliver an address on "Achievement in science." Weather permitting, this will be broadcasted by radio-phone. The annual address of the president, Professor J. C. Jensen, will be delivered at the general session on Saturday morning, the subject being "Recent research in atomic structure." In addition to a large number of papers, plans have been made for the showing of twelve reels of the finest scientific motion pictures available, and six or seven large manufacturers of scientific apparatus have agreed to send some of their latest models for exhibition.

At the regular meeting of the Biological Society of Washington, to be held on April 29, at 8 p.m., at the Cosmos Club, Washington, D. C., Dr. William E. Ritter, of the Scripps Institution for Biological Research, will address the society on "The usefulness and the peril of laboratory methods in biology."

## UNIVERSITY AND EDUCATIONAL NOTES

MCPHERSON COLLEGE, McPherson, Kansas, is building a four story science hall modern in every way. The estimated cost is \$160,000. It is expected to be completed by August.

A CONTRACT has been let for a new medical building at the University of Alabama, Tusca-

loosa, at a cost of \$82,000. Construction work will be started immediately.

THE *Journal* of the American Medical Association states that the governor of Bengal laid the foundation stone of the new School of Tropical Medicine at Calcutta on February 14. The Indian government donated \$195,000 for the site and will contribute toward the upkeep of the institution. Owing to the prevalence of tropical diseases in India, the work of the laboratory will be chiefly the investigation of causes of tropical diseases in an effort to discover more accurate methods of diagnosis and more advantageous process of treatment.

STEWART S. BRUCE, formerly professor of metallurgy and ore dressing at the Michigan College of Mines, is temporarily filling the chair of metallurgy at the University of Idaho, Professor R. B. Elder having a leave of absence on account of illness.

THE research chair of medical psychology in the University of Queensland, Brisbane, has been filled by the appointment of Dr. J. P. Lowson, university demonstrator in experimental psychology at the University of Cambridge.

## DISCUSSION AND CORRESPONDENCE

### OSBORN VERSUS BATESON ON EVOLUTION

PROFESSOR H. F. OSBORN'S challenge (this *Journal*, February 24, 1922) to Professor Bateson for his position on the evolution theory, ought to and probably will, make many a biologist gasp a little and wonder a good deal.

If one scans a bit thoughtfully the landscape of human life for the last few decades, he can hardly fail to see signs that the whole battle ground of evolution will have to be fought over again; this time not so much between scientists and theologians as among scientists themselves.

The purpose of this note is to put side-by-side two sentences, one from Bateson's Toronto address, the other from Osborn's challenge. Says Bateson: "Biological science has returned to its rightful place, investigation of the struc-

ture and properties of the concrete and visible world"; and Osborn: "If this opinion [Bateson's as to the failure of studies so far made to reveal the causes of the origin of species] is generally accepted as a fact or demonstrated truth, the way is open to search the causes of evolution along other lines of inquiry."

Of the many things that fairly beg to be said about both these sentences, this seems to me the most urgent: Why have biologists felt it so much more incumbent upon them to "search the causes" of the origin of the bodies which are subject matter of their science, than astronomers, and geographers and geologists have to search the causes of origin of the bodies they study?

Or, putting much the same question in another form: What would have been the effect on the sciences of astronomy, and geography, and geology, had their devotees given relatively as much time and energy to searching for causes as have evolutionary biologists?

I doubt if any one acquainted however slightly with progress in the several domains mentioned would hesitate much for answers to these queries.

Undoubtedly those who investigate the heavenly bodies are interested, and deeply interested, in the causes which produced these bodies. And undoubtedly, too, all students of the earth want to discover the "causal factors" in earth production.

I venture here to be a trifle personal. Having been for years closely connected with investigations on the oceanography of the Pacific Ocean, I am greatly interested in oceanic causation. Indeed it would be a very great satisfaction could I contribute even indirectly and in the smallest way to discovering the causes of the Pacific Ocean.

But my oceanographic feeling has always been that "investigation of the structure and properties of the concrete and visible" greatest of oceans would be more fruitful than would search after the causes of it. Possibly I am wrong, but my guess is that the attitude of the great majority of modern astronomers, geographers, and geologists, toward their domains has resembled more my attitude toward